CLOW WATER SYSTEMS COMPANY

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March 11, 2011

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Re: Consent Decree Civil Action No. [CV] 10-JEO-1902-S and 40 CFR Part 63, Subpart ZZZZZ

Dear Sir/Madam:

Clow Water Systems Company (Clow) will conduct a stack test on May 11, 2011 of its Cupola Scrubber System (P901) to demonstrate compliance with the Emission Limit of 0.078 pounds of particulate matter per ton of metal melted as required by the Consent Decree (Appendix 3 (III)).

Clow will also utilize this test to demonstrate compliance with the Emission Limit of 0.80 pounds of particulate matter per ton of metal melted as required by 40 CFR Part 63, Subpart

ZZZZZ [§63.10895(c)(1)]. Method 9 and Method 22 will be conducted simultaneously to demonstrate compliance with the Fugitive Opacity Limit of 20% (6-minute average) required by 40 CFR Part 63 Subpart ZZZZZ [§63.10895(e)].

A copy of the Intent To Test (ITT) / Site Specific Test Plan (SSTP) is enclosed.

If you have any questions regarding the enclosed, please contact me at (740) 291-1087.

Sincerely,

Heather A. Klesch

Heather A. Klesch
Environmental Manager
Clow Water Systems Company

Site-Specific Test Plan

Determination of Total Front Half Particulate Matter and Visible Emissions

Cupola Emission System (P901)

EPA Methods 1, 2, 3, 4, 5, 9, and 22

Clow Water Systems Company
Coshocton, Ohio

Date Scheduled: May 11, 2011
Job Number: 110504

Prepared by:

Air Compliance Testing, Inc.

PO Box 41156
Cleveland OH 44141-0156
Phone: (800) EPA-AIR1 (372-2471)

Revision Date: March 11, 2011

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1.0 INTRODUCTION

1.1 Summary of Test Program

Clow Water Systems Company (Clow), located in Coshocton, Ohio, is conducting compliance stack emissions testing for their Cupola Emissions System (P901).

The purpose of the testing project will be to satisfy the emission testing requirements pursuant to Appendix 3 Section III of the McWane, Inc. Consent Decree and the testing requirements outlined in 40 CFR Part 63, Subpart ZZZZZ.

This testing has been scheduled for completion on May 11, 2011.

The scope of this testing project is to simultaneously measure Total Front-Half Particulate Matter (PM) using EPA Method 5 at the Ringlet Scrubber Exhaust Stack from the Cupola Material Handling Process (P901), Visible Emissions (VEs) using EPA Method 9 from the Shroud Area, and VEs using EPA Method 22 from the Flange / Fabrication Building during Maximum Achievable Operations.

The Shroud Area is expected to be the highest emitting point of fugitive emissions from the building that houses metal melting, inoculation, pouring, cooling, shakeout, shot blasting, grinding, mold and core making, and other metal finishing operations.

Fugitive emissions are not expected from the Flange / Fabrication Building therefore Clow will be using EPA Method 22. This building houses metal finishing operations. A roof vent central to the building will be observed for fugitive emissions.

The test methods applied during this test will be EPA Methods 1, 2, 3, 4, 5, 9, and 22. All of the test stacks will be checked for the presence of cyclonic flow.

1.2 Key Personnel

The key personnel who will coordinate the test program and their phone numbers are:

George Czerniak, US EPA - Region 5, 312-886-6789
Marco Deshaies, Ohio EPA, SEDO DAPC, 740-380-5255
Philip Billick, Director of Testing, Air Compliance Testing, Inc. (ACT), 800-372-2471
Robert Lisy, Quality Assurance Manager, ACT, 800-372-2471
Tyson Houchin, Operations Director, ACT, 800-372-2471

2.0 TEST PROGRAM

2.1 Objectives

In order to provide this emissions information, the scope of work will be to simultaneously measure PM using EPA Method 5 at the Ringjet Scrubber Exhaust Stack from the Cupola Material Handling Process (P901), VEs using EPA Method 9 from the Shroud Area and VEs using EPA Method 22 from the Flange / Fabrication Building during Maximum Achievable Operations.

Because Clow's production schedule begins before daylight hours, it may not be feasible to conduct EPA Method 9 or EPA Method 22 sampling during the first test run. Clow and ACT will make every attempt to conduct both as soon as daylight breaks, but will complete this testing during runs 2 and 3 at a minimum.

The specific test objectives for this testing project at the P901 will be:

Measure PM from P901 during the aforementioned operating conditions at the Ringjet Scrubber Exhaust Stack.

Measure Stack Gas Velocity and Volumetric Flow Rate, Dry Molecular Weight, and Moisture Content from P901 during the aforementioned operating conditions at the Ringjet Scrubber Exhaust Stack.

Determine the mass emissions rates for the Ringjet Scrubber Exhaust associated with the P901 utilizing the variables above.

Observe VEs using EPA Method 9 from the Shroud Area.

Observe VEs using EPA Method 22 from the Flange / Fabrication Building.

2.2 Test Matrix

Table 2.1 presents the sampling and analytical matrix log for this test.

Table 2.2 presents all of the measurements that will be made at each test location.

Table 2.3 presents the Control Device Summary for this test.

Any field test changes or problems that occur during this test that would bias the accuracy of the results of this test will be presented in the final Test Report.

Any on site changes to this protocol or the conditions of the test, will be subject to the approval of the on site EPA representatives.

P901 Test Matrix							
Sampling Location	**No. of Runs**	**Sample Type / Pollutant**	**Sampling Method**	**Sampling Organization**	**Sample Run Time (min)**	**Analytical Method**	**Analytical Laboratory**
P901 Ringjet Scrubber Exhaust Stack	3	PM	EPA Method 5	Air Compliance Testing, Inc.	120	5	Air Compliance Testing, Inc.
Shroud Area	3 (if possible)	VEs	EPA Method 9	Air Compliance Testing, Inc.	120	N/A	N/A
Flange / Fabrication Building	3 (if possible)	VEs	EPA Method 22	Clow	120	N/A	N/A

Table 2.1 – Clow Water Systems Company Test Matrix

Runs 1, 2, and 3		
P901 Scrubber Exhaust Stack	**Shroud Area**	**Flange / Fabrication Building**
PM (M5)	VEs (M9)	VEs (M22)
Flow Rate (M2)		
O_2 / CO_2 (M3)		
Moisture (M4)		

Table 2.2 – Measurements at Each Test Location

Clow Control Device Summary		
Affected Process	**Control Device**	**Monitored Control Parameters**
P901	Venturi and Ringjet Scrubbers	Differential Pressure and Water Flow Rates

Table 2.3 – Clow Control Device Summary

3.0 SOURCE DESCRIPTION

3.1 Process Description and Operation

Clow melts scrap metal for the production of ductile iron pipe and fittings.

Clow will be responsible for providing to Air Compliance Testing, Inc. signed copies of the charge logs covering all testing time periods. Clow will also provide differential pressure and water flow rate data and EPA Method 22 documentation.

3.2 Control Equipment Description

The emissions from each charge are controlled by a capture and collection system. Emissions from the P901 are controlled primarily by the Venturi and Ringjet Scrubber System.

3.3 Stack Gas Sampling Locations

3.3.1 Scrubber Exhaust Stack

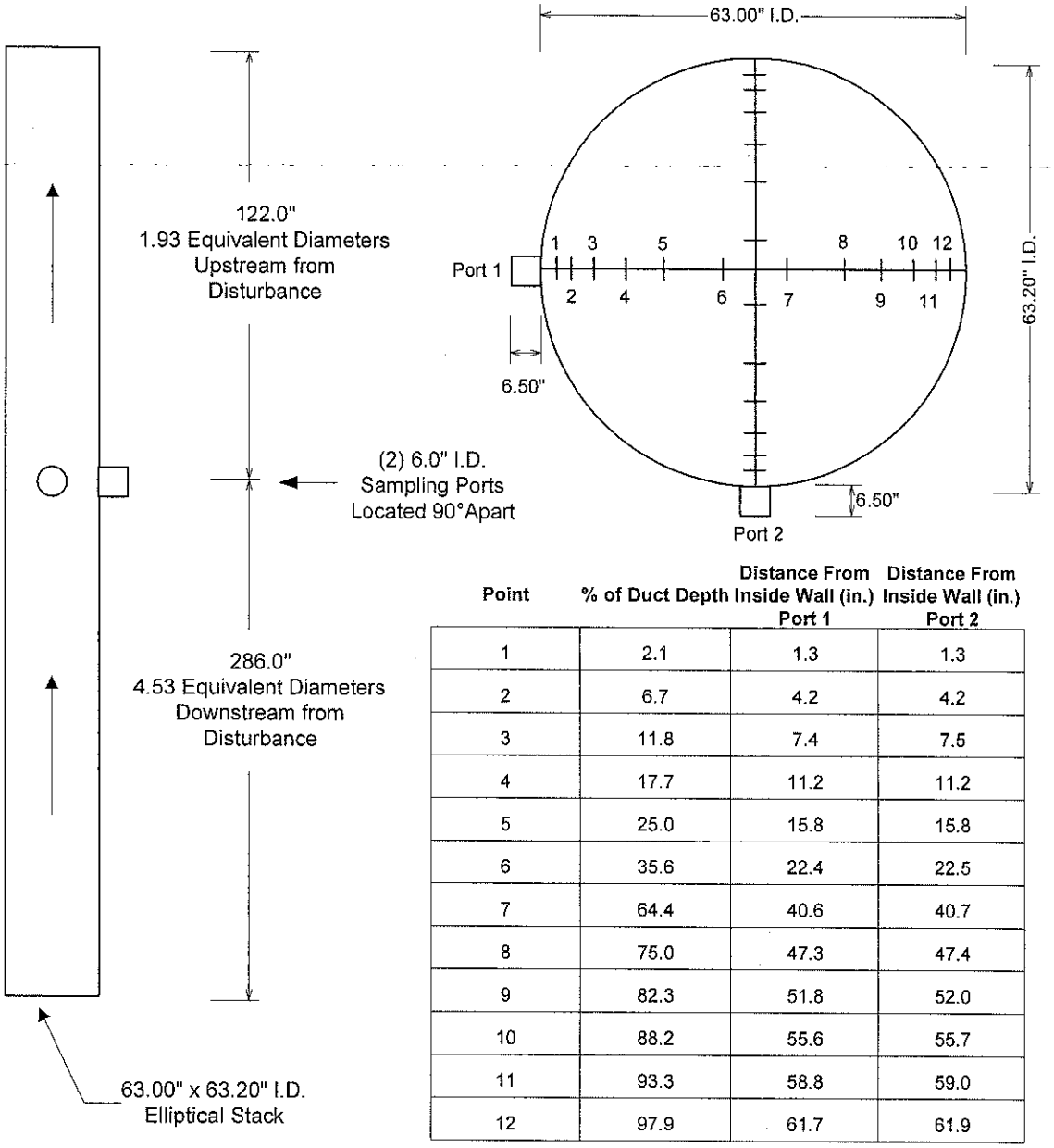
The Scrubber Exhaust Stack measures 63.0 inches in I.D., is oriented vertically, and will be accessed via a manlift. The sampling ports are located 90° apart from one another at a point which meets EPA Method 1 criteria. The stack will be traversed for Stack Gas Velocity and Volumetric Flow Rate, Molecular Weight, and Moisture Content determinations as well as PM concentrations.

Figure 3.1 schematically illustrates the traverse point and sample port locations to be utilized. These measurements will be verified during this compliance testing event and may change pending that verification.

Figure 3.2 schematically illustrates the P901 process.

3.4 Process Sampling Locations

The EPA Reference Test Methods performed do not specifically require that process samples be taken during this testing event.



Point	% of Duct Depth	Distance From Inside Wall (in.) Port 1	Distance From Inside Wall (in.) Port 2
1	2.1	1.3	1.3
2	6.7	4.2	4.2
3	11.8	7.4	7.5
4	17.7	11.2	11.2
5	25.0	15.8	15.8
6	35.6	22.4	22.5
7	64.4	40.6	40.7
8	75.0	47.3	47.4
9	82.3	51.8	52.0
10	88.2	55.6	55.7
11	93.3	58.8	59.0
12	97.9	61.7	61.9

Figure 3.1 – P901 Scrubber Exhaust Stack Traverse Point Location Schematic

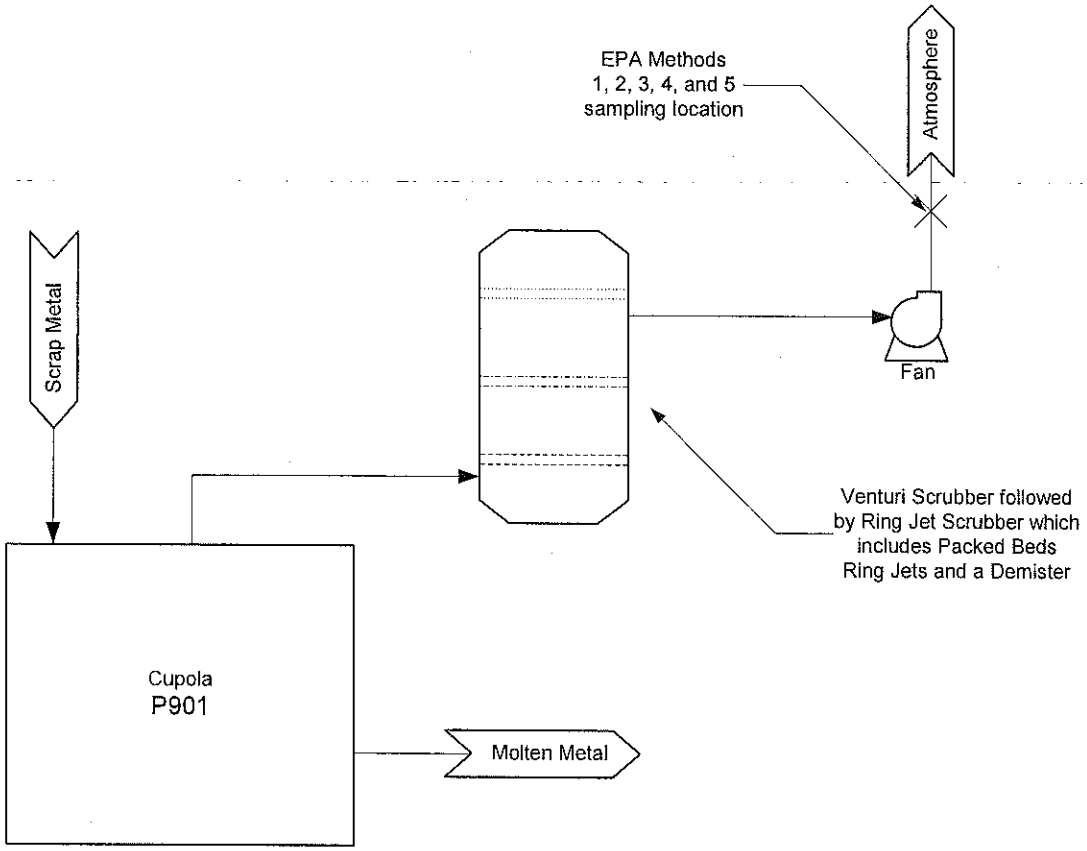


Figure 3.2 – P901 Process Schematic

4.0 SAMPLING AND ANALYTICAL PROCEDURES

4.1 Test Methods

4.1.1 EPA Method 1: Sample and Velocity Traverses for Stationary Source
Principle: To aid in the representative measurement of pollutant emissions and/or total volumetric flow rate from a stationary source, a measurement site where the effluent stream is flowing in a known direction is selected, and the cross-section of the stack is divided into a number of equal areas. A traverse point is then located within each of these equal areas.

4.1.2 EPA Method 2: Determination of Stack Gas Velocity and Volumetric Flow Rate (type S Pitot Tube)
Principle: The average gas velocity in a stack is determined from the gas density and from measurement of the average velocity head with a Type S (Stausscheibe or reverse type) pitot tube. Cyclonic flows will measured at each sampling location.

4.1.3 EPA Method 3: Gas Analysis for the Determination of Dry Molecular Weight
Principle: A gas sample is extracted from a stack by one of the following methods: (1) single-point, grab sampling; (2) single-point, integrated sampling; or (3) multi-point, integrated sampling. The gas sample is analyzed for percent CO2, percent O2, and if necessary, for percent CO. For dry molecular weight determination, either an Orsat or a Fyrite analyzer may be used for the analysis.

4.1.4 EPA Method 4: Determination of Moisture Content in Stack Gases
Principle: A gas sample is extracted at a constant rate from the source; moisture is removed from the sample stream and determined either volumetrically or gravimetrically.

4.1.5 EPA Method 5: Determination of Particulate Emissions from Stationary Sources (Filterable PM only)
Principle: Particulate matter (PM) is withdrawn isokinetically from the source and collected on a quartz fiber filter maintained at a temperature in the range of 120 ± 14°C (248 ± 25°F) or such other temperature as specified by an applicable subpart of the standards or approved by the Administrator, U.S. Environmental Protection Agency, for a particular application. The PM mass, which includes any material that condenses at or above the filtration temperature, is determined gravimetrically after removal of uncombined water. This method was utilized in its entirety as per the procedures outlined in 40 CFR Part 60, Appendix A.

The sampling train to be utilized during this testing project is depicted in Figure 4.1.

Figures 4.2 and 4.3 demonstrate a flow diagram of the sample recovery and analysis which will be utilized in this testing event.

4.2 Procedures for Obtaining Process Data

Clow will be responsible for providing production records for the test event.

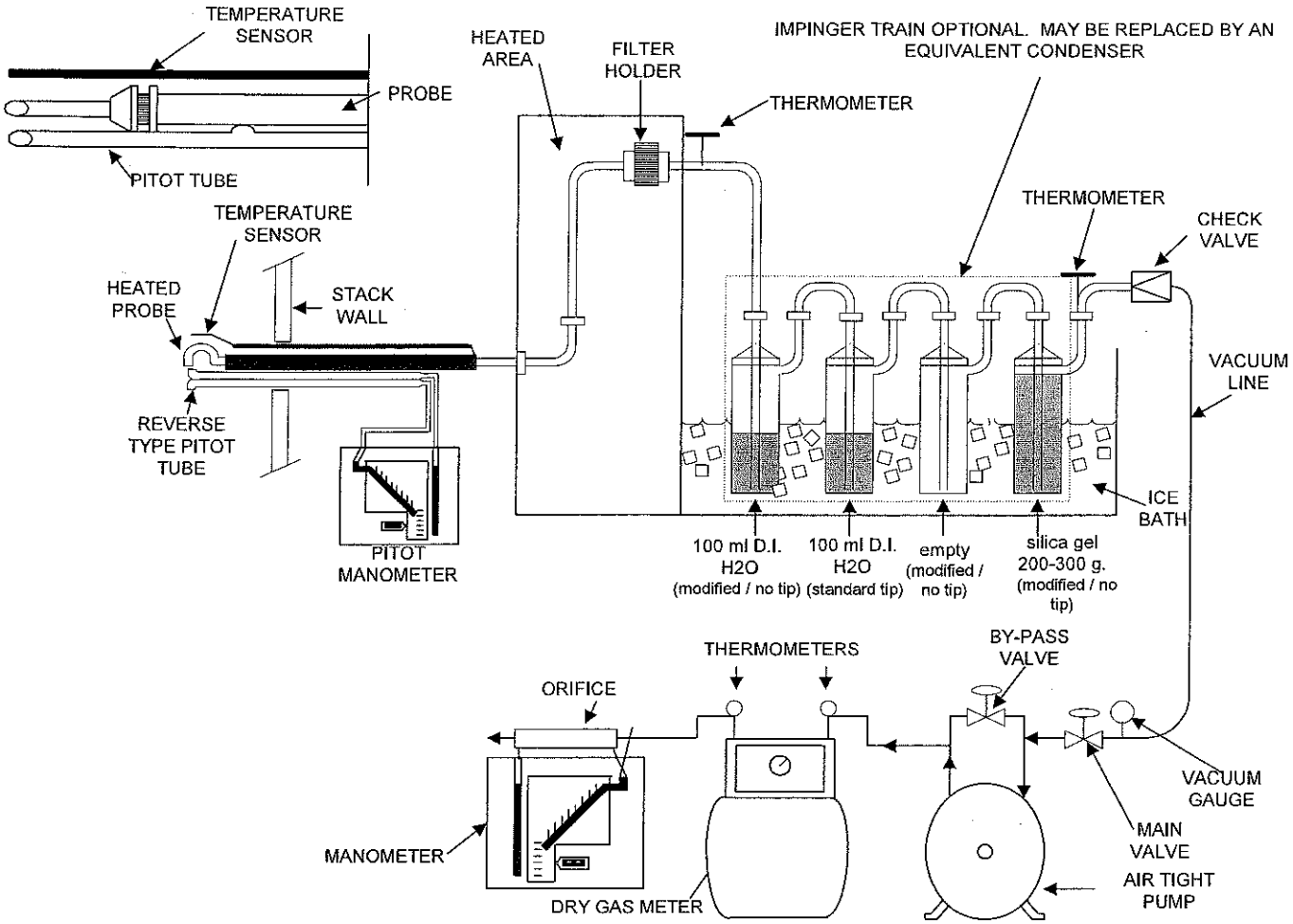


Figure 4.1 – EPA Method 5 Sample Train Schematic

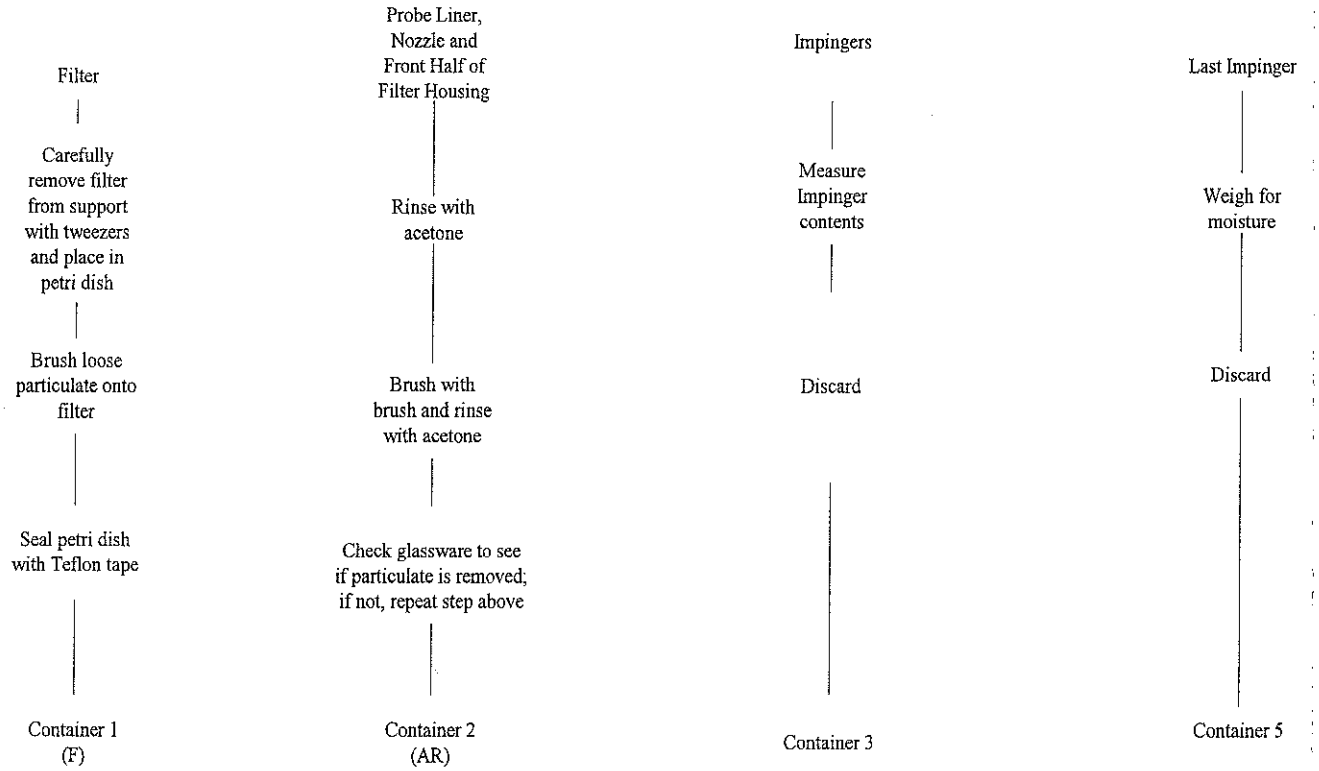


Figure 4.2 – Method 5 Sample Recovery Scheme

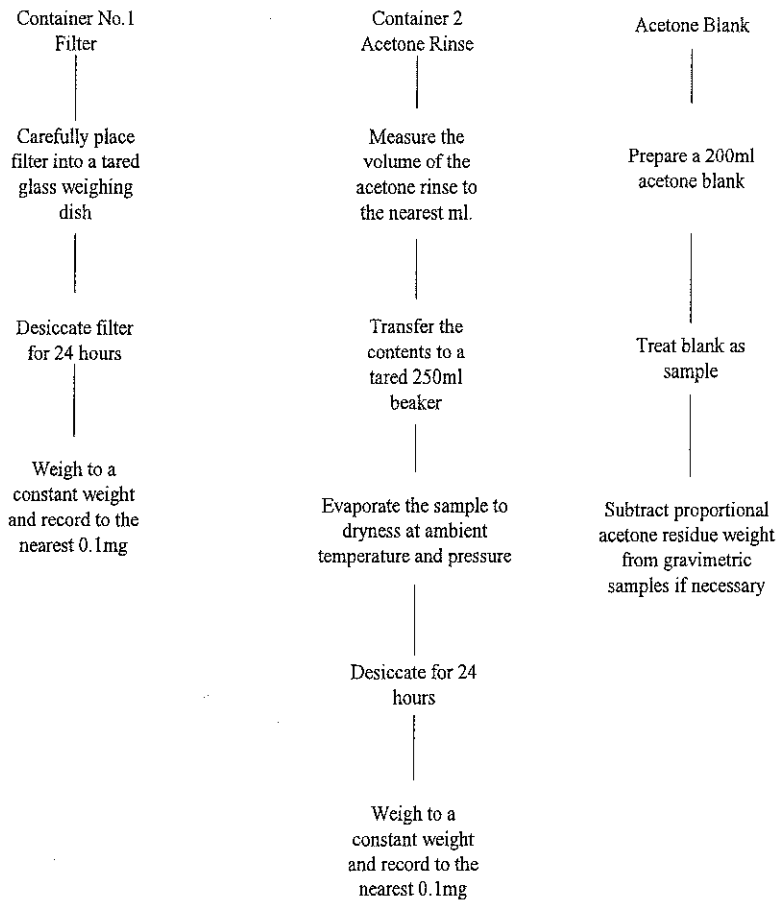


Figure 4.3 – PM Analytical Scheme

5.0 QA/QC PROCEDURES

5.1 Internal QA Audits

Each test event will consist of three sampling runs in order to obtain a representative sample and provide data duplication in the unforeseen event of a test run being invalidated. The Analytical Laboratories will perform the QA measures described in the specific methodologies utilized during this test event.

All meter boxes and sampling trains to be used during sampling will perform within the requirements of their respective methods and will be calibrated at least sixty days before their use in the field. All pre-test and post-test sample train leak checks will be below the 0.02 cfm limit. Minimum metered volumes and percent isokinetics will also be met where applicable.

Internal QA program: The following activities, at a minimum, will be performed for EPA Method 5.

Meter box calibration
Meter box thermometer calibration
Impinger thermocouple calibration
Stack thermometer calibration
Nozzle calibrations

5.2 External QA Audits

EPA and Clow Water Systems Company shall have the right to have an observer present to observe and evaluate all aspects of the performance test, including, but not limited to, instrument calibration, data validation, sample logging, and documentation of quality control data and field maintenance activities

Any QA/QC problems that occur during this test event will be presented in the final Test Report.

5.3 Data Quality Objectives

The expected precision shall be as described in the applicable methodology. Audit sample analysis will be within the tolerance of the applicable methodology. The data that is collected and incorporated into the report will be 100% complete and peer reviewed for accuracy

Figures 5.1 - 5.7 are some examples of the data sheets which will be utilized during this test event.

5.4 QA/QC of Data Reduction

The Quality Assurance Manager will verify the validated computer template is in place and setup properly prior to the test event. This will ensure that the calculations performed in the field are accurate. During sampling, the Test Team Leader will conduct spot checks of the Testing Technicians recording data to verify that the data being recorded is accurate and within the specifications set forth by the EPA test methods. The Test Team Leader will input then data in the field into the validated computer template and determine the percent isokinetics.

At the conclusion of the testing event, the data will undergo a peer review with the Quality Assurance Manger being the final check to verify the data's completeness and accuracy.

5.5 Sample Identification and Custody

The Field Laboratory Technician is responsible for ensuring all the samples are recovered and accounted for. The Field Laboratory Technician is also responsible for ensuring that the proper custody procedures are followed. The Project Manager will supply labels for each sample to ensure that each label is uniquely identified. Figures 5.8 - 5.9 are some examples of the forms and labels which will be utilized.

Method 1 Preliminary Field Data

Plant: Clow Water Systems Company
City, State: Coshocton, Ohio
Location: Scrubber Exhaust Stack

Duct Depth (Inner Diameter):

Relative Location		
From Far Inside Wall to Outside of Port		
Nipple Length and/or Wall Thickness		
Nipple Protrusion		
Stack or Duct Depth (Inner Diameter)		
Stack or Duct Width (Only If Rectangular)		
Stack Outer Circumference		
Port Hole Inner Diameter		

Equivalent Diameter = D_e

$D_e = \frac{2 \times \text{Depth} \times \text{Width}}{\text{Depth} + \text{Width}} = \frac{2(\quad)(\quad)}{(\quad)+(\quad)} =$

Distance Upstream from Flow Disturbance	
Diameters Upstream from Flow Disturbance (≥ 0.5 D_e)	
Minimum Traverse Points Needed *	

Distance Downstream from Flow Disturbance	
Diameters Downstream from Flow Disturbance (≥ 2 D_e)	
Minimum Traverse Points Needed *	

*Circle Larger of the Two

Stack or Duct Area = _____ $in.^2$

Location of Points in Circular Stacks or Ducts

	4	6	8	10	12	14	16	18	20	22	24
1	6.7	4.4	3.2	2.6	2.1	1.8	1.6	1.4	1.3	1.1	1.1
2	25.0	14.6	10.5	8.2	6.7	5.7	4.9	4.4	3.9	3.5	3.2
3	75.0	29.6	19.4	14.6	11.8	9.9	8.5	7.5	6.7	6.0	5.5
4	93.3	70.4	32.3	22.6	17.7	14.6	12.5	10.9	9.7	8.7	7.9
5		85.4	67.7	34.2	25.0	20.1	16.9	14.6	12.9	11.6	10.5
6		95.6	80.6	65.8	35.6	26.9	22.0	18.8	16.5	14.6	13.2
7			89.5	77.4	64.4	36.6	28.3	23.6	20.4	18.0	16.1
8			96.8	85.4	75.0	63.4	37.5	29.6	25.0	21.8	19.4
9				91.8	82.3	73.1	62.5	38.2	30.6	26.2	23.0
10				97.4	88.2	79.9	71.7	61.8	38.8	31.5	27.2
11					93.3	85.4	78.0	70.4	61.2	39.3	32.3
12					97.9	90.1	83.1	76.4	69.4	60.7	39.8
13						94.3	87.5	81.2	75.0	68.5	60.2
14						98.2	91.5	85.4	79.6	73.8	67.7
15							95.1	89.1	83.5	78.2	72.8
16							98.4	92.5	87.1	82.0	77.0
17								95.6	90.3	85.4	80.6
18								98.6	93.3	88.4	83.9
19									96.1	91.3	86.8
20									98.7	94.0	89.5
21										96.5	92.1
22										98.9	94.5
23											96.8
24											98.9

Location of Points in Rectangular Stacks or Ducts

	2	3	4	5	6	7	8	9	10	11	12
1	25.0	16.7	12.5	10.0	8.3	7.1	6.3	5.6	5.0	4.5	4.2
2	75.0	50.0	37.5	30.0	25.0	21.4	18.8	16.7	15.0	13.6	12.5
3		83.3	62.5	50.0	41.7	35.7	31.3	27.8	25.0	22.7	20.8
4			87.5	70.0	58.3	50.0	43.8	38.9	35.0	31.8	29.2
5				90.0	75.0	64.3	56.3	50.0	45.0	40.9	37.5
6					91.7	78.6	68.7	61.1	55.0	50.0	45.8
7						92.9	81.3	72.2	65.0	59.1	54.2
8							93.8	83.3	75.0	68.2	62.5
9								94.4	85.0	77.3	70.8
10									95.0	86.4	79.2
11										95.5	87.5
12											95.8

Note:

1) Stacks having a diameter greater than 24in, shall have no traverse points located within 1.0in of the Stack walls.

2) Stacks having a diameter less than or equal to 24in, shall have no traverse points located within .50in of the Stack walls.

Relocate to a distance equal to the inside diameter of the nozzle being used or to the above minimum distances, whichever is larger.

Stack Build-up $^{Y}/_{N}$

Point	% of Duct Depth	Distance From Inside Wall (in.)	Distance From Outside of Port (in.)
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			

Air Compliance Testing, Inc.

Job Number: _____
Done By / Date: _____ / _____
Checked By / Date: _____ / _____ : _____ / _____
Final Check By / Date: _____ / _____

Figure 5.1 – EPA Method 1 Field Data Sheet

Plant Name	Clow Water Systems Company		
City, State	Coshocton, Ohio		
Test Location	Scrubber Exhaust Stack		Run Number
Barometric Pressure (in.Hg)		Barometer I.D.	Stack Static Pressure (in.H_2O)
Pitot I.D.	Cp	Manometer I.D.	Umbilical I.D.
Thermocouple I.D.		Temp Display I.D.	Length / Dia Width
Start Time		Finish Time	Ambient Temperature (°F)

Relative Port Location

Test Point	Yaw Angle	ΔP (in.H_2O)	√ΔP	Temp (°F)
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				

Total Points Used _____

Relative Port Location

Test Point	Yaw Angle	ΔP (in.H_2O)	√ΔP	Temp (°F)
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
Sum				
Avg.				

Note: Yaw angle average is the sum of the absolute values divided by the number of measurements, and must be ≤ 20°. Yaw angle is the angle measured from the point where zero ΔP should be obtained to the point where zero ΔP is actually obtained.
ΔP average is the square of the average square root.

Air Compliance Testing, Inc.

Moisture Data

Port	Time	Dry Bulb (°F)	Wet Bulb (°F)	% H_2O	%R.H.

Stack Gas Velocity (v_s), (ft/sec)

$(85.49)(C_p)(\sqrt{\Delta P})_{avg}$ sq.rt.$[(460+t_{savg})/(P_s)(M_s)]$

C_p - Pitot Coefficient (dimensionless)

t_{savg} - Stack Temperature (°F)

P_s - Stack Pressure (in.Hg)

M_s - Gas Wet Molecular Wt.(dimensionless)

v_s = (85.49) ( ) ( ) X sq.rt. (460 +) / ( )( )

v_s =

Actual Volumetric Flow Rate (Q_{aw}), (acfm)

(60 / 144) (v_s) (A)

v_s - Stack Gas Velocity (ft/sec)

A - Stack Area (in^2)

Q_{aw} = (60 / 144) ( ) ( )

Q_{aw} =

Notes		
Apparatus Leak Check - Done By:		
	Pre-Test	Post-Test
Static Side:	Pass / Fail	Pass / Fail
Impact Side:	Pass / Fail	Pass / Fail

Job Number: _____
Done By / Date: _____ / _____
Checked By / Date: _____ / _____ : _____ / _____
Final Check By / Date: _____ / _____

Figure 5.2 – EPA Method 2 Field Data Sheet

Method 3 Orsat Field Data Sheet

Plant Name:	Clow Water Systems Company	Fuel Type:	
Sampling Location:	Scrubber Exhaust Stack		
Pre-Test Leak Check:		Post-Test Leak Check:	

Run Number:		Date:			Operator:		
Time of Sample Collection	Time of Analysis	CO_2 Reading (A)	O_2 Reading (B)	CO Reading (C)	$\%O_2$ (B-A)	%CO (C-B)	$\%N_2$ (100-C)
	Average		-	-			
Analyzer I.D. -			Tedlar Bag I.D. -		F_o =		

Run Number:		Date:			Operator:		
Time of Sample Collection	Time of Analysis	CO_2 Reading (A)	O_2 Reading (B)	CO Reading (C)	$\%O_2$ (B-A)	%CO (C-B)	$\%N_2$ (100-C)
	Average		-	-			
Analyzer I.D. -			Tedlar Bag I.D. -		F_o =		

Run Number:		Date:			Operator:		
Time of Sample Collection	Time of Analysis	CO_2 Reading (A)	O_2 Reading (B)	CO Reading (C)	$\%O_2$ (B-A)	%CO (C-B)	$\%N_2$ (100-C)
	Average		-	-			
Analyzer I.D. -			Tedlar Bag I.D. -		F_o =		

Air Compliance Testing, Inc.

Job Number: ___________
Done By / Date: ______ / ______
Checked By / Date: ______ / ______ : ______ / ______
Final Check By / Date: ______ / ______

Figure 5.3 – EPA Method 3 Field Data Sheet

Method 4 Moisture Recovery

Plant Name Clow Water Systems Company Location Scrubber Exhaust Stack

Reagents Prepared By / Date _____ / _____

	1	2	3	4
Run Number				
Run Date				
Analysis Date				
Time of Analysis				
Turbidity / Color (Clear, Cloudy, Suspended Particulates, etc.)				
Impinger #1				
Final Weight (g)				
Tared Weight (g)				
Condensed H_2O (g)				
Impinger #2				
Final Weight (g)				
Tared Weight (g)				
Condensed H_2O (g)				
Impinger #3				
Final Weight (g)				
Tared Weight (g)				
Condensed H_2O (g)				
Total Condensed (g)				
SILICA GEL				
Final Weight (g)				
Tared Weight (g)				
Adsorbed H_2O (g)				
Total H_2O Collected (g)				

Analytical Balance ID A - BAL - 00

Air Compliance Testing, Inc.

Job Number: _____
Done By / Date: _____ / _____
Checked By / Date: _____ / _____ : _____ / _____
Final Check By / Date: _____ / _____

Figure 5.4 – EPA Method 4 Field Data Sheet

Plant	Clow Water Systems Company	Meter box no.	T-MTB-	Gamma	
Location	Scrubber Exhaust Stack	Pump no.	T-PMP-	K Factor	/ /
Run no.		Nomograph no.	T-NOM-	Nozzle Size, in.	
Test start time		Probe no.	T-PRB-	Barometric pressure, in.Hg	Barometer no. T - BAR -
Test stop time		Filter box no.	T-FLB-	Ambient temperature, °F	
Pre-test leak rate @ 15in.Hg		Impinger box no.	T-IMB-	Filter box temperature setting, °F	
Post-test leak rate @ in.Hg		Umbilical cord no.	T-UMC-	Probe temperature setting, °F	
Pre-test pitot leak check - total	static	Umbilical adapter no.	T-UMA-	Orsat flow rate setting, SCFH	
Post-test pitot leak check - total	static	Orsat bag no.		Meter box operator	Date

POINT	CLOCK TIME min	DRY GAS METER CF	PITOT In. H_2O ΔP	ORIFICE ΔH In. H_2O DESIRED	ORIFICE ΔH In. H_2O ACTUAL	PROBE TEMP °F	TAC TEMP °F	DRY GAS TEMP, °F INLET	DRY GAS TEMP, °F OUTLET	FILTER TEMP °F	IMPINGER TEMP °F	FILTER EXIT TEMP °F	PUMP VACUUM in.Hg	ORSAT FLOW SCFH	STATIC PRESSURE ± in.H_2O
Final															

Nomograph Calibration Variables ΔH@ Cp Ts Tm Ps Pm Bws

Comments:

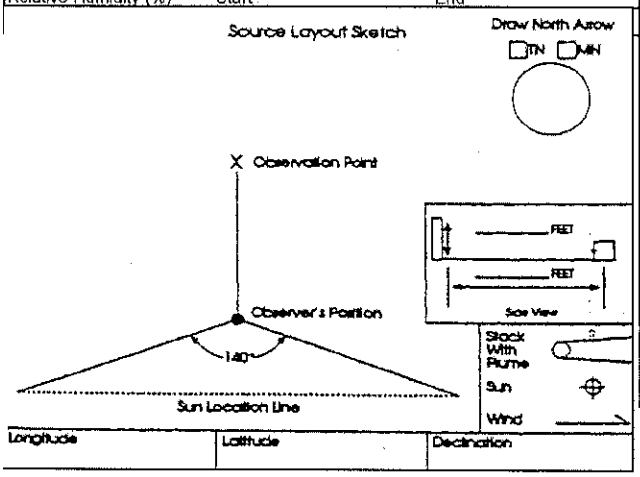
Test Observers -

Figure 5.5 – EPA Method 5 Field Data Sheet

Company Name	Clow Water Systems Company	Observation Date	Run No.
Facility Name	Shroud Area	Start Time	
Street Address		End Time	
City	Hammond State IN Zip		

Process & Unit #	Operating Mode
Control Equipment	Operating Mode

Describe Emission Point			
Height of Emission Point	Start	End	
Height Relative to Observe	Start	End	
Distance from Observer	Start	End	
Direction from Observer (°)	Start	End	
Vertical Angle to Observation Point (°)	Start	End	
Distance and Direction to Observation Point from Emission Point			
Start			
End			
Describe Emissions	Start	End	
Emission Color	Start	End	
If Water Droplet Plume	Attached	Detached	
Point in the Plume at which Opacity was Determined			
Start			
End			
Describe Plume Backgrour	Start	End	
Background Color	Start	End	
Sky Conditions	Start	End	
Wind Speed (mph)	Start	End	
Wind Direction (From)	Start	End	
Ambient Temperature (°F)	Start	End	
Relative Humidity (%)	Start	End	



Sec.	0	15	30	45	Sec.	0	15	30	45
Min.									
0					30				
1					31				
2					32				
3					33				
4					34				
5					35				
6					36				
7					37				
8					38				
9					39				
10					40				
11					41				
12					42				
13					43				
14					44				
15					45				
16					46				
17					47				
18					48				
19					49				
20					50				
21					51				
22					52				
23					53				
24					54				
25					55				
26					56				
27					57				
28					58				
29					59				

Range of Opacity Readings
Minimum Maximum
Average Opacity for Highest Period
Observer's Name (Print)
Observer's Signature
Date
Organization *Air Compliance Testing, Inc.*
Certified By Eastern Technical Associates Date:

Figure 5.6 – Method 9 Field Data Sheet

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FUGITIVE OR SMOKE EMISSION INSPECTION
OUTDOOR LOCATION

Company Location Company Rep.	Observer Affiliation Date
Sky Conditions Precipitation	Wind Direction Wind Speed
Industry	Process Unit

Sketch process unit; indicate observer position relative to source; indicate potential emission points and/or actual emission points.

OBSERVATIONS	Clock Time	Observation period duration, min:sec	Accumulated emission time, min:sec
Begin Observation			
End Observation			

Figure 22-1

Figure 5.7 – EPA Method 22 Field Data Sheet

Method 5 Record of Custody

Shipping/Transportation Container Number: _____

Seal I.D. No.		Full Signature	Date	Time	Reason for Breaking Seal	Final Vol. ml
	S					
	B					
	S					
	B					
	S					
	B					
	S					
	B					
	S					
	B					
	S					
	B					
	S					
	B					
	S					
	B					
	S					
	B					
	S					
	B					
	S					
	B					
	S					
	B					
	S					
	B					

Were all seals intact?____Yes _____No (Describe seal and reasoning in the "Remarks")

Were all liquid levels at marked levels?_____Yes _____No (Estimate loss in the "Remarks")

Received By Sample Custodian_____ _____ _____

(Full Signature) (Date) (Time)

Remarks: _____

Air Compliance Testing, Inc.

Job Number: _____
Done By / Date: _____ / _____
Checked By / Date: _____ / _____ : _____ / _____
Final Check By / Date: _____ / _____

Figure 5.8 – EPA Method 5 Record of Custody Sheet

010800A Run 1 Impinger #1 100 ml H2O _____g Tare Wt	010800A Run 2 Impinger #1 100 ml H2O _____g Tare Wt	010800A Run 3 Impinger #1 100 ml H2O _____g Tare Wt	010800A Run 4 Impinger #1 100 ml H2O _____g Tare Wt
010800A Run 1 Impinger #2 100 ml H2O _____g Tare Wt	010800A Run 2 Impinger #2 100 ml H2O _____g Tare Wt	010800A Run 3 Impinger #2 100 ml H2O _____g Tare Wt	010800A Run 4 Impinger #2 100 ml H2O _____g Tare Wt
010800A Run 1 Impinger #3 Empty _____g Tare Wt	010800A Run 2 Impinger #3 Empty _____g Tare Wt	010800A Run 3 Impinger #3 Empty _____g Tare Wt	010800A Run 4 Impinger #3 Empty _____g Tare Wt
010800A Run 1 Impinger #4 _____g Silica Gel	010800A Run 2 Impinger #4 _____g Silica Gel	010800A Run 3 Impinger #4 _____g Silica Gel	010800A Run 4 Impinger #4 _____g Silica Gel
010800A- 1 - AR Acetone Rinse	010800A- 2 - AR Acetone Rinse	010800A- 3 - AR Acetone Rinse	
010800A- 4 - AR Acetone Rinse	010800A- BL - AR Acetone Rinse	010800A-1-F	010800A-2-F
010800A-3-F	010800A-4-F		

Figure 5.9 – Example Sample Labels

6.0 REPORTING AND DATA REDUCTION REQUIREMENTS

6.1 Report Format

Figure 6.1 demonstrates the typical Table of Contents utilized for a Compliance Stack Emission Test Report.

Figure 6.2 demonstrates the typical Emissions Results Table utilized in a Compliance Stack Emission Test Report.

Table of Contents

Figure 6.1 – Example Test Report Table of Contents

	Scrubber Exhaust Stack			
	Run 1	**Run 2**	**Run 3**	**Average**
Total Front Half Particulate Matter Mass Emission Rate (lb/hr)				
Total Front Half Particulate Matter Stack Gas Concentration (gr/dscf)				
Visible Emissions (% opacity)				
Stack Gas Average Flow Rate (acfm)				
Stack Gas Average Flow Rate (dscfm)				
Stack Gas Average Velocity (fpm)				
Stack Gas Average Static Pressure (in-H_2O)				
Stack Gas Average Temperature (°F)				
Stack Gas Percent by Volume Moisture (%H_2O)				
Measured Stack Inner Diameter (in)				
Percent by Volume Carbon Dioxide in Stack Gas (Dry Basis) (%CO_2)				
Percent by Volume Oxygen in Stack Gas (Dry Basis) (%O_2)				
Percent by Volume Carbon Monoxide in Stack Gas (Dry Basis) (%CO)				
Percent by Volume Nitrogen in Stack Gas (Dry Basis) (%N_2)				

The "<" symbol indicates that target pollutant was not detected above the Minimum Detection Limit of the analytical method.

Table 2.2 - Emission Results

Figure 6.2 – Example Emissions Results Table

7.0 PLANT ENTRY AND SAFETY

7.1 Safety Responsibilities

The Project Manager is responsible for ensuring compliance with plant entry, health, and safety requirements.

7.2 Safety Program

Air Compliance Testing has a comprehensive health and safety program that satisfies Federal OSHA requirements. The basic elements include: (1) written policies and procedures, (2) routine training of employees and supervisors, (3) use of personnel protective equipment, (5) hazard communication, (6) pre-mobilization meetings with facility personnel and Air Compliance Testing personnel, and (7) routine surveillance of the on-going work.

7.3 Safety Requirements

All of the test personnel will adhere to the following standard safety and precautionary measures:

Confine selves to authorized areas only.
Wear hard hats at all times on site, except in sample recovery trailers.
Wear steel toed boots at all times while on site.
Wear safety glasses with side shields that meet ANSI Z87.1 requirements at all times while on site.
Have first aid equipment and fire extinguishers readily available.
Hearing protection in designated areas.

8.0 PERSONNEL RESPONSIBILITIES AND TEST SCHEDULE

8.1 Test Site Organization

The key tasks and task leaders are:

Management: Charles Giffels / Rob Lisy / Tyson Houchin, ACT
Test Preparation: Charles Giffels / Rob Lisy / Tyson Houchin, ACT, Heather Klesch, Clow
Modifications to Facility / Services: Heather Klesch, Clow Water Systems Company
Sampling Site Accessibility: Charles Giffels / Rob Lisy / Tyson Houchin, ACT, Heather Klesch, Clow
Sample Recovery: Rob Lisy / Tyson Houchin, ACT
Daily Sampling Schedule: Rob Lisy / Tyson Houchin, ACT, Heather Klesch, Clow

8.2 Test Preparations

8.2.1 Construction of Special Sampling and Analytical Equipment
There are no equipment modifications or special analytical equipment required for this testing event.

8.2.2 Modification to Facility
All of the test locations already have test ports installed. The test ports at the Baghouse Exhaust Stacks are positioned at point which should meet EPA Method 1 criteria. These measurements will be verified on the set up day prior to the first test day.

8.2.3 Services Provided by Facility
Clow Water Systems Company will provide adequate power for all of the sampling locations. Air Compliance Testing will utilize their own extension cords as needed.

8.2.4 Access to the Sampling Sites
A manlift will be used to access the Ringjet Scrubber Exhaust Stack.

8.2.5 Sample Recovery Area
Air Compliance Testing will utilize their own sample recovery vehicle for this project.

8.3 Test Personnel Responsibilities and Detailed Schedule

ACT personnel will arrive on site the day before the scheduled test day in order to setup sampling equipment and be prepared for an **5:00 am** start on the following day. All sample trains will be leak checked that day to ensure no delays during the course of the sampling. During this "setup day", ACT will meet with the designated contact (Heather Klesch) to discuss the testing objectives and any necessary safety training.

On test day, ACT will arrive at least one hour before the scheduled start time to allow all of the sample train components (probe and filter) requiring heat to stabilize to their appropriate temperatures.

Figures 8.1 lists the test personnel and their responsibilities during this testing event.

Figure 8.2 presents a detailed test schedule of a typical compliance test.

	Staff Assignment	Responsibility
1	Testing Director	Supervise the testing project to ensure QA/QC procedures are being maintained throughout the sampling event
2	Project Manager	Coordinate all testing activities. Maintain communications between all test participants, plant personnel, and the EPA representative.
3	Test Team Leader	Ensure all sampling locations are executing sampling according to the specified methods and report status of the testing to the Project Manager.
4	Testing Technician	Ensure assigned sampling site is sampling according to the specified test methods and reports status to the Test Team Leader. Manage the preparation and operation of the M5 sampling train.
5	Field Technician	Assist in the preparation and operation of the M5 sampling train.
6	Field Laboratory Technician	Coordinate preparation and recovery of sampling trains. Maintain sample chain of custody.
7	Process Data Collector (Clow)	Record the required process parameters at the appropriate intervals and perform EPA Method 22 measurements.
8	Test Team Liaison	Coordinate between test team and Clow Water Systems Company.

Figure 8.1 – Test Personnel and Responsibilities

Crew Member	Activity
Setup Day	
1-6	Travel to Clow Water Systems Company - Coshocton, Ohio
1	Establish communications between the Test Team and EPA representatives.
3	Organize stack lists and assign personnel to their appropriate test locations.
4 and 5	Utilize Stack List and begin setup of the Scrubber Exhaust Test Location
6	Unpack and prepare the sample recovery laboratory. Then, prepare the sample trains for the test locations.
6	Coordinate preparation and recovery of sampling trains. Maintain sample chain of custody.
7 and 8	Coordinate the process data gathering and discuss the procedures to be followed during test day.
Test Day	
8	Contact Clow Water Systems Company plant contact and EPA representative to review process status as well as update plant on test preparation status.
2-6	Perform any initial calibration requirements mandated by the EPA representative and heat up all of the required testing equipment.
4 and 5	Perform three Method 5 test runs at the Scrubber Exhaust test location.
3	Oversee the testing operations to ensure proper sampling technique. Review and enter field test data to ensure proper sampling technique.
8	Coordinate test runs with Clow Water Systems Company to ensure proper operating conditions during testing.
7	Record and monitor the required process data.
6	Recover samples and prepare sampling trains for Run No. 3.
8	At the end of the test, secure the test area and communicate with Clow Water Systems Company and EPA on the demobilization of the test team.

Figure 8.2 – Detailed Test Schedule

9.0 APPENDIX

Appendix attached.

APPENDIX

to

Site-Specific Test Plan

Determination of Total Front Half Particulate Matter and Visible Emissions

Cupola Emission System (P901)

EPA Methods 1, 2, 3, 4, 5, 9, and 22

Clow Water Systems Company
Coshocton, Ohio

Date To Be Conducted: May 11, 2011
Job Number: 110504

Prepared by:
Air Compliance Testing, Inc.
PO Box 41156
Cleveland OH 44141-0156
Phone: (800) EPA-AIR1 (372-2471)

Revision Date: March 11, 2011

INTENT TO TEST NOTIFICATION (One Emissions Unit Per Sheet)

Agency use only
Date Received
Assigned

Facility Premise No. **0616010006**
Emissions Unit PTI No. **PSD Permit No. 06-07432**
SCC Number **30400301**

Proposed Test Date **May 11, 2011**
Proposed Start Time **5:00 am**

A. Facility Contact Information:

Name **Clow Water Systems Company**
Address **PO Box 6001, Coshocton OH 43812-6001**
Contact Person **Heather Klesch**
Telephone (O) **740-291-1087** (Cell) **740-502-0577**
E-Mail **heather.klesch@clowwater.com**

Testing Firm Information:

Name **Air Compliance Testing, Inc.**
Address **PO Box 41156, Cleveland OH 44141-0156**
Contact Person **Tyson E. Houchin**
Telephone (O) **216 525-0900** (Cell) **440-821-7805**
E-Mail **tyson@aircomp.com**

B. Test Location Information

Name **Clow Water Systems Co.**
Contact Person **Heather Klesch**
Address **S Sixth St, Coshocton OH 43812**
Telephone (O) **740-291-1087** (Cell) **740-502-0577**

C. Test Plan and Emissions Unit Information Table: List the applicable information under each respective column heading.

Emission Unit	StackID	Test Location	Control Equipment	Monitoring Equipment	Pollutant(s) to be Tested	EPA Test Method	Number of Sampling Points	Total Time per Test Run (min)	Number of Sampling Runs
Cupola Emission System (P901)	A	Scrubber System Exhaust Stack	Scrubber System	Pressure Drop and Water Flow Rates	Volumetric Flow Rate	1, 2, 3, and 4	24	120	3
					PM	5	24	120	3
	B	Shroud Area	None	N/A	VEs	9	24	120	3 (if possible)
Flange / Fabrication Building	C	Central Roof Vent	None	N/A	VEs	22	24	120	3 (if possible)

Are *any* modifications or alternatives as spelled within the test methods being proposed? **Yes [ ] No [X]** If "no", then no modifications or alternatives, however minor, will be accepted. If yes, list each test method and section being modified, and attach a detailed modification description and justification.

Source is testing to comply with (check all that apply): **McWane Consent Decree Appendix 3 Section III and 40 CFR Part 63, Subpart ZZZZZ**

D. What is the maximum rated capacity or throughput of the emissions unit given its permit-to-install or permit-to-operate? **85 Tons / hour**

Has the facility scheduled production or throughput so that the emissions unit can be operated at the maximum capacity given its permit-to-install or permit-to-operate during the test? **Yes [X] No [ ]**

Specify how the operating rate will be demonstrated during the testing: **Normal facility process and recordkeeping procedures**

Sampling Location(s): **Inlet [ ] Outlet [X] Simultaneous [ ]** Will cyclonic flow check(s) be conducted? **Yes [ ] No [X] Measured during previous test event**

Fuel Sampling: **Coal-Proximate [ ] Ultimate [ ] Other [X] If other specify: N/A**

Emission Rate to be calculated using: **F-Factor [ ] Ultimate Coal Analysis [ ] Other [X] If other specify: As dictated by EPA Method 5 calculation algorithms in terms of lb/hr**

Has any maintenance or parts replacement been performed on the emissions unit or the control equipment within the last year? **Yes [X] No [ ] Ringjets replaced on March 5, 2011**

(Note: Some maintenance, such as installing new filter bags in a baghouse, or replacing the activated carbon in an adsorber, may disqualify the emissions unit from a performance test until a sufficient amount of time has elapsed to ensure a test which will be representative of normal operations.)

E. Sample Train Calibration: All affected measuring and monitoring equipment should be calibrated within 60 days of the scheduled testing.

THE FOLLOWING ADDITIONAL INFORMATION SHALL BE SUBMITTED AS ATTACHMENTS:

F. Sample Train Information:

1. A schematic diagram of each sampling train.
2. The type or types of capture media to be used to collect each gas stream pollutant. (Include filter specification sheets)
3. Sample tube type, (e.g., glass, teflon, stainless steel, etc.)
4. Probe cleaning method and solvent to be used, if applicable.

1. See attached Site-Specific Test Plan.

2. Type or types of capture media: M3 - Fyrite: The Fyrite analyzer utilizes a chromium chloride-zinc chloride-hydrochloric acid solution for O2 absorption and a potassium hydroxide solution for CO2 absorption. M4: Samples are condensed in H2O and adsorbed onto Silica Gel. M5: Samples are collected on Glass Filter (filter specification sheets attached). M9 / 22: N/A

3. Sample tube type: M3 - Fyrite: borosilicate glass or stainless steel with connecting borosilicate glassware. M4: borosilicate glass or stainless steel with connecting borosilicate glassware. M5: Probe liner is borosilicate glass or stainless steel with a borosilicate glass or stainless steel nozzle.

4. Probe cleaning method and solvent to be used: M1: N/A M2: N/A M3 - Fyrite: N/A M4: N/A M5: Reagent Grade Acetone. M9 / 22: N/A

G. Laboratory Analysis:

A description of the laboratory analysis methods to be used to determine the concentration of each pollutant.

M3 - Fyrite: A Fyrite analyzer will be used for the analysis in a manner consistent with manufacturer's specifications. M4: A gas sample is extracted at a constant rate (or isokinetically in conjunction with other methods) from the source; moisture is removed from the sample stream and determined either volumetrically or gravimetrically. M5: The analysis for Particulate Matter (PM) will be a gravimetric analysis. M9 / 22: N/A

H. Description of Operations:

- A description of any operation, process, or activity that could vent exhaust gases to the stack being tested. This shall include the description and feed rate of all materials capable of producing pollutant emissions used in each separate operation. Maximum process weight rate, or coating rate, and parameters such as line speed, VOC content etc. should be specifically documented with calculations to confirm worst case scenario emissions.

Note 1: All compliance demonstration testing shall be performed at maximum rate capacity as specified by the equipment manufacturer or at the maximum rate actually used in the emissions unit operation, whichever is greater, or at any other rate as agreed upon with Ohio EPA.

Note 2: If the emissions unit is not operated at maximum capacity, or as close as possible thereto, the emissions unit might be derated to the production capacity achieved during the test.

The only operations, processes, and/or activities that could vent exhaust gases to the test stack are those described above in this document.

I. Stack and Vent Description:

- A dimensional sketch or sketches showing the plan and elevation view of the entire ducting and stack arrangement. The sketch should include the relative position of all processes or operations venting to the stack or vent to be tested. It should also include the position of the ports relative to the nearest upstream and downstream gas flow disturbance or duct dimensional change. The sketches should include the relative position, type, and manufacturer's claimed efficiency of all gas cleaning equipment.
- A cross sectional dimensional sketch of the stack or duct at the sampling ports, showing the position of sampling points. In case of a rectangular duct, show division of duct into equal areas.
- For Fugitive emissions testing, a sketch illustrating the specific emissions points to be observed must be included.

See attached Site-Specific Test Plan

J. Safety:

Describe all possible safety hazards including such items as the presence of toxic fumes, high noise levels, areas where eye protection is required, etc. Note: Conditions considered unsafe at the time of the test will cause postponement.

The Plant requires the use of safety glasses, safety shoes, hard hats, and hearing protection (in designated areas). At this time, and to the best of our belief and knowledge, there are no toxic fumes or other hazards expected to be on site at this facility that would cause you to formally prepare for your exposure to them. It is our recommendation however, to consult plant personnel regarding its safety policies before accessing the production areas on this site. Air Compliance Testing personnel will be required to wear safety shoes and safety glasses at all times while on site at the facility to comply with our own company policy.